(f) actuating means for rotating said primary roller and thereby advancing said device along a collapsible tube,

(g) spring means for providing a torque which compels said lever handles to pivot in a direction which bears said rollers together with a force sufficient to squeeze and flatten a collapsible tube and expel the contents therefrom.

REMARKS:

Claim 1 has been rewritten to more particularly define the invention in a patentable manner over prior art U.S. patent 3,586,213 to John B. Gill (22 Jun 1971). The specification has been amended to reflect this change made to the claims, and further to include a discussion of prior art U.S. patent 3,414,166 to Paul G. Martin (03 Dec 1968) and U.K. patent application GB 2,052,434 A to Rodney W. Park (28 Jan 1981), cited by Examiner.

Rejection of Claim 1 under Section 102:

Claim 1 was rejected under Section 102 as being fully anticipated by U.S. patent 3,586,213 to John B. Gill (22 Jun 1971). In Examiner's response to item g of Claim 1 (spring means for providing torque to lever handles), Gill is cited (Gill, Col. 3, lines 70-75) as having anticipated this spring. However, Gill discusses only the possibility of a spring retaining clip on the ends of the rollers, to secure the rollers to the handles and to restrain their lateral movement. Such a spring retainer would not serve to bear the rollers together for the purpose of squeezing collapsible tubes. Nowhere does Gill teach or anticipate the inclusion of spring means for providing torque to the handles. Gill in fact states (Gill, Col. 3, lines 7-8 and Col. 4, lines 15-19) that operation of his device involves manually squeezing the handles.

Furthermore, the device of Gill is a double class 2 lever, whereas the device of the present application is a double non-crossing class 1 lever. A class 1 lever is defined as a lever for which the points of load and effort are on opposite sides of the fulcrum, while

a class 2 lever has the point of load between the point of effort and the fulcrum. Double signifies that there are two lever arms sharing a common fulcrum, and non-crossing signifies that the two lever arms do not cross. As such, in the device of Gill spring means for providing torque to the handles cannot easily or obviously be included. If spring means are included, the user would inconveniently have to pry the handles apart in order to separate the rollers for the purpose of insertion or extraction of a collapsible tube. Whereas, in the device of the present application, to separate the rollers the user need only squeeze the lever handles together, an operation much easier than prying them apart. Conversely, had Gill designed his device to be a double non-crossing class 1 lever as in the device of the present application, but without spring means, then the user would again have to use a prying motion, now to bear the rollers together to squeeze the collapsible tube.

Applicant therefore submits that the introduction of spring means goes hand in hand with designing the device as a double non-crossing class 1 lever, and that such an embodiment is not taught or anticipated by Gill. To make clear this distinction between the device of Gill and that of the present application, Claim 1 has been narrowed in definition by specifically indicating that the device is this type of lever. The specification also has correspondingly been amended. Claim 1 (amended) is submitted to be allowable over Gill and reconsideration and allowance are respectfully solicited.

Unobviousness of Spring Means:

In the device of the present application, the spring means for providing a torque to bear the rollers together (item g of Claim 1) alleviates the user of the need to manually squeeze the collapsible tube. In combination with the rollers, which push the tube contents forward with a rolling action that is inherently more efficient than a sliding action, the user exerts relatively little force to operate the device, a great advantage for certain users. The device is also of handheld size and of economical construction, which makes it much more appealing to the consumer. Very few tube-squeezing devices in the prior art utilize spring means to squeeze collapsible tubes, and even fewer that additionally utilize rollers. Within this latter subgroup of prior art, Applicant is

aware of only one device which is of handheld size, namely U.S. patent 1,773,104 to S.G. Johnson (19 Aug 1930). The disadvantages of the device of Johnson, though, as already explained in the original application, are that there are no means (other than by hand) to turn the rollers and there are no means (again other than by hand) for separating them. The device of the present application solves both of these disadvantages with a crank and lever handles, respectively. That this solution to the disadvantages of the device of Johnson has never before been implemented, especially over such a long time period (75 years), suggests that the device of the present application, with its attendant advantages, is unobvious.

With respect to Gill, although his device is of handheld size and utilizes rollers, it does not contain spring means for squeezing the tube. As argued above already, the device of Gill would have to be redesigned as a double non-crossing class 1 lever in order to effectively introduce spring means, and this fundamental redesign renders such introduction of spring means unobvious.

Furthermore, as is also already explained in the original application, while both the device of Gill and that of the present application solve the problem of squeezing collapsible tubes, that of Gill is more suited to those tubes for which a substantial amount of force is required to squeeze and expel the contents. Specifically, it works most effectively with tubes of purely metal construction, which can be crimped, and does not work well with resilient plastic tubes, which cannot typically be crimped (Gill, Col. 3, lines 42-50). Whereas, the device of the present application is ideally suited to resilient plastic and plastic/metal foil composite tubes, for which the squeezing force provided by spring means is adequate. It is ideally suited to these types of tubes not only because it does not attempt to crimp them, but additionally because the tube remains squeezed while the device is present on the tube, thereby preventing back flow of tube contents. The device of Gill prevents back flow only if it is able to crimp the tube, and by Gill's own admission is not able to do so with resilient plastic tubes (Gill, Col. 3, lines 45-47). That the inventions of Gill and of the present application solve different problems further indicates that the introduction of spring means in view of Gill is unobvious.

Rejection of Claims 3-7 under Section 102:

Claims 3-7 were also rejected under Section 102 as being fully anticipated by Gill. These claims, however, are dependent on the main Claim 1, which was argued above to contain novel structure (item g, spring means), not taught or anticipated by Gill. Consequently, these dependent claims also contain this novel structure over Gill.

In addressing Claim 6, Examiner cites Gill (Gill, Col. 3, lines 51-60) as having protuberances which create a snap fit for the trunnions, or in the case of Gill, for the pins (Gill, part no. 70 in Fig.'s 6, 7, and 9). However, Gill employs in his preferred embodiment not a snap fit for these pins but rather a press fit, wherein the pins are fixed to the handles and the rollers rotate about these pins. Gill does suggest (Gill, Col. 3, lines 69-75) another embodiment in which the pins are fixed to the rollers, and rotate within the handles. However, in neither of these two embodiments are the pins inserted and held in to the handles by snap fit. Gill does not specify protuberances at the entrance of the pin holes, which would permit such a snap fit. Applicant therefore submits that in the device of the present application, protuberances located at the entrance of the gudgeons and creating a snap fit for the trunnions, represents novel structure not taught or anticipated by Gill.

Claims 3-7 have not been amended. It is to be noted, though, that these claims are dependent now on main Claim 1 (amended).

Rejection of Claim 2 under Section 103:

Claim 2 was rejected under Section 103 as being unpatentable over Gill in view of U.S. patent 5,495,801 to Fred Dankert (05 Mar 1996). It was already argued above that spring means for providing a torque to bear the rollers together (item g of Claim 1) represents not only novel structure over Gill, but is also unobvious. Since Claim 2 is dependent on the main Claim 1, it also contains this novel and unobvious structure over Gill.

Nevertheless, specifically addressing Dankert, while Dankert presents a tacky friction sheath for rollers, it is as a solution for removing ink from certain surfaces. Since it

solves a completely different problem and represents non-analogous art from that of gripping the surface of a collapsible tube, the use of a friction sheath in the device of the present application in view of Dankert is unobvious.

Furthermore, a friction sheath would not be effective in the device of Gill, which is designed to crimp the collapsible tube as the device advances forward. A friction sheath would not be able to crimp the tube, the result being that back flow of tube contents would not be prevented. Therefore, the introduction of a friction sheath in the device of Gill is unobvious and unmeritable.

Claim 2 has not been amended. It is to be noted, though, that this claim is dependent now on main Claim 1 (amended).

Rejection of Claim 8 under Section 103:

Claim 8 was rejected under Section 103 as being unpatentable over Gill in view of U.S. patent application 2002/0011497 A1 to Barry Farris (31 Jan 2002). It was already argued above that spring means for providing a torque to bear the rollers together (item g of Claim 1) represents not only novel structure over Gill, but is also unobvious. Since Claim 8 is dependent on the main Claim 1, it also contains this novel and unobvious structure over Gill.

Nevertheless, specifically addressing Farris, in Examiner's response Farris is cited as teaching to provide a torsional spring to allow for a twisting force to be applied (Farris, part no. 28, Fig. 6). However, in the device of Farris, this torsional spring serves only to bias one of the rollers to be parallel to the other roller (Farris, paragraph 0041). The spring is not intended to bear the rollers together with a force sufficient to squeeze collapsible tubes. Rather, a hook is provided (Farris, part no. 16, Fig. 7), which when latched holds the rollers at a predefined distance apart. With the rollers so spaced, only collapsible tubes specifically designed to fit within this space between the rollers can be squeezed. Since the torsional spring of Farris solves a different problem than does the torsional spring of Claim 8, the use of a torsional spring in the device of the present application in view of Dankert is unobvious.

Claim 8 has not been amended. It is to be noted, though, that this claim is dependent now on main Claim 1 (amended).

Rejection of Claim 9 under Section 103:

Claim 9 was rejected under Section 103 as being unpatentable over Gill in view of U.S. patent 3,414,166 to Paul G. Martin (03 Dec 1968). It was already argued above that spring means for providing a torque to bear the rollers together (item g of Claim 1) represents not only novel structure over Gill, but is also unobvious. Since Claim 9 is dependent on the main Claim 1, it also contains this novel and unobvious structure over Gill.

Nevertheless, specifically addressing Martin, the device of Martin employs a pair of rollers pivotably connected, and a compression spring to compel the rollers together to squeeze a collapsible tube. This device suffers, however, from two disadvantages. The first of these is that it is not a handheld device. The device consists of many parts, some relatively large in dimension, and as such is not of economical construction. The second disadvantage is that no means is provided for separating the rollers, therefore making insertion and removal of the collapsible tube problematic. The device of the present application does not suffer from these disadvantages. It is of handheld size and consists of relatively few parts, thereby making it economical. Lever handles are provided which enable the user to separate the rollers, for rapid insertion and extraction of the tube. Applicant submits, therefore, that the introduction of a compression spring in the device of the present application in view of Martin is unobvious. Nevertheless, the device of Martin is sufficiently pertinent to this application that Applicant has amended the specification to include a brief discussion of this prior art reference.

Claim 9 has not been amended. It is to be noted, though, that this claim is dependent now on main Claim 1 (amended).

Non-Applied References:

Examiner lists two references, U.K. patent application GB 2,052,434 A to Rodney William Park (28 Jan 1981) and U.S. patent 5,118,011 to Raun A. Kopp (02 Jun 1992) as being pertinent to this application.

Park presents a tube squeezing device which in one embodiment employs a pair of rollers connected by extension springs, and has a crank attached to one of the rollers. The crank, however, cannot turn the roller to which it is attached by more than about 90 degrees. Therefore, either a ratchet mechanism or a gravity-assisted mechanism is required to advance the device along a collapsible tube, both of which add complexity. Furthermore, like the device of Martin above, the device of Park suffers both from being relatively large and from not providing a means for separating the rollers. As such, the device of the present application in view of Park is both novel and unobvious. Nevertheless, the device of Park is sufficiently pertinent to this application that Applicant has amended the specification to include a brief discussion of this prior art reference.

Kopp presents a tube-squeezing device which employs a pair of rollers whose spacing can be controlled with a set screw, and has a crank attached to one of the rollers. Like the devices of Park and Martin above, the device of Kopp is not handheld and its rollers cannot be readily separated for easy insertion and extraction of a collapsible tube. Furthermore, spring means do not provide the compelling force to squeeze the tube, but rather the rollers are maintained a fixed distance apart (though adjustable with a set screw). For these reasons, the device of the present application in view of Kopp is both novel and unobvious.

Changes to Specification:

As already mentioned, the prior art devices of Martin and Park are briefly discussed. The concept of a double non-crossing class 1 lever is defined and indicated in the device of the present application. The phrase "double non-crossing class 1 lever" is placed in various sections of the specification.

In the section entitled "Preferred Embodiment - Operation", the word "gudgeons" is replaced by the word "rollers", and the word "shackles" is replaced by the word "pintles".

The reason for this is that earlier in the specification, when the concept of the lever is discussed, the gudgeons and shackles have not yet been introduced. For the purpose of defining the lever arrangement, the rollers are effectively in the same location as the gudgeons, and pintles are effectively in the same location as the pintles. Therefore, no new matter has been introduced, but rather the terms used before are used again for consistency. This replacement is again repeated in the section entitled "Conclusions, Ramifications, and Scope".

Finally, the format of dates has been changed, to be clearer.

Conclusion:

Applicant respectfully submits that the claims define over the prior art under Section 102. Spring means for bearing the rollers together with a force sufficient to squeeze collapsible tubes has been shown to be novel in view of Gill. Protuberances, located at the entrance of the gudgeons, as a means of providing a snap fit for the trunnions, have also been shown to be novel in view of Gill. Lever handles, which provide a means to easily separate the rollers to allow for insertion and extraction of a collapsible tube, have been shown to be novel in view of Martin and Park.

Applicant further respectfully submits that the claimed distinctions are of patentable merit under Section 103. Spring means have been shown to be unobvious in view Gill. A friction sheath around the rollers is unobvious in view of Gill and Dankert. The use of a torsional spring in particular as the spring means for bearing the rollers together is unobvious in view of Farris. The use of a compression spring in particular as the spring means is unobvious in view of Martin. Finally, lever handles have been shown to be unobvious in view of Park.

Accordingly, Applicant submits that this application is now in full condition for allowance, which action Applicant respectfully solicits.

Very respectfully,

E. Torbet — March 8, 2005

Signature — Date

Eric Torbet
Applicant Pro Se

P.O. Box 1452
Goleta, CA 93116
(805) 692-5297